

POSZ LAW GROUP, PLC

ATTORNEYS AT LAW

12040 SOUTH LAKES DRIVE, SUITE 101
RESTON, VA 20191

SPECIALIZING IN PATENTS, TRADEMARKS & COPYRIGHTS

DAVID S. POSZ
JAMES E. BARLOW *
BRIAN C. ALTMILLER
ROBERT L. SCOTT, II
CYNTHIA K. NICHOLSON
R. EUGENE VARDELL*
THERESE B. VARDELL*

DEBRA D. SHOEMAKER, PH.D.**

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** PATENT AGENTTEL: (703) 707-9110
FAX: (703) 707-9112
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To: Examiner Shuwang Liu
GAU 2634

From: Brian C. Altmiller

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Applicants:	McCORKLE		
Filed:	October 10, 2000		
TC/A.C.:	2634		
Examiner:	Liu, Shuwang		
Docket No.:	10X-218/XSI.018		
Customer No.:	23400		
ENTITLED:	SYSTEM AND METHOD FOR GENERATING ULTRA WIDEBAND PULSES		

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Signature		Date	September 8, 2005

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AMENDMENT UNDER 37 C.F.R. 1.116

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Arlington, VA 22202

Sir:

In response to the Office Action dated **July 12, 2005**, the period for response to which extends through **October 12, 2005**, please consider the following amendments and comments.

Comments and Response begins on page 2 of this paper.

Appl. No. 09/685,205
Amendment dated September 8, 2005
Reply to Office Action of July 12, 2005

COMMENTS AND RESPONSE

In view of the comments below, Applicant respectfully requests that the Examiner reconsider the present application including rejected claims, as amended, and withdraw the claim rejections.

Claim Rejections 35 USC § 102

The Examiner has rejected claim 22 under 35 U.S.C. § 102(e) as being allegedly anticipated by United States Patent No. 6,862,317 to Mohan et al. ("Mohan"). Applicant respectfully traverses this rejection.

Claim 22 recites "encoding data from a data source as a non-return-to-zero sequence of pulses," "generating a pulse sequence having at least two pulses, and having a predetermined pattern," and "mixing the non-return-to-zero sequence of pulses with the pulse sequence to produce a sequence of shaped ultra wideband wavelets, each wavelet having a predetermined shape having the data encoded therein."

The Examiner asserts that the feature of encoding data from a data source as a non-return-to-zero sequence of pulses is disclosed by the operation of the encoder 10, which operates to encode an NRZ signal using a variable pulse width code. This creates a variable aperture coded (VAC) signal (See, e.g., Mohan, column 2, lines 28-62, and FIGs. 1 and 2.)

The Examiner then asserts that the feature of generating a pulse sequence having at least two pulses, and having a predetermined pattern, is disclosed by the operation of the differentiator 20, which operates to differentiate the VAC signal to produce a series of pulses time aligned with the transitions in the VAC signal (i.e., a $\frac{\delta VAC}{\delta t}$ signal). (See, e.g., Mohan, column 2, line 63, through column 3, line 10, and FIGs. 1 and 2.)

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However, this does not generate a pulse having a predetermined pattern, as recited in claim 22. Any pattern that the $\frac{\delta VAC}{\delta t}$ signal has will vary with the pattern of the NRZ signal, since the $\frac{\delta VAC}{\delta t}$ signal is ultimately derived from the NRZ signal. And since the NRZ signal carries successive bits, presumably it will vary according to an unpredictable pattern.

The Examiner also asserts that the feature of mixing the non-return-to-zero sequence of pulses with the pulse sequence to produce a sequence of shaped ultra wideband wavelets is disclosed by the operation of element 5, the mixer 30, and the second mixer 70. (See, e.g., Mohan, column 6, lines 1-21, and FIG. 5.) However, a careful analysis of Mohan will show that this is not the case.

To begin with, Applicant can find no element 5 disclosed in Mohan and assumes that this number was meant to refer to FIG. 5, which contains the mixer 30 and the second mixer 70. Furthermore, neither the mixer 30 nor the second mixer 70 disclose the feature of mixing a non-return-to-zero sequence of pulses with a pulse sequence to produce a sequence of shaped ultra wideband wavelets. The mixer 30 simply mixes the output of a level detector 25 (a LEVEL signal) with a 10.7 MHz oscillating carrier signal from a local oscillator to have the LEVEL signal modulate the carrier signal into a modulated carrier (CARR) signal. This CARR signal is then provided to a band pass filter (BPF) to create a single-side-band phase (SSB) signal. (See, e.g., Mohan, column 3, lines 7-55, and FIGs. 1 and 2.) Similarly, the second mixer 70 operates to mix an output of an amplifier (an amplified SSB signal) with a 77.57 MHz oscillating signal to up-convert the amplified SSB signal. (See, e.g., Mohan, column 6, lines 42-58, and FIG. 5.)

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Both the mixer 30 and the second mixer 70 mix an incoming signal with a plain oscillating signal. Neither the mixer 30 nor the second mixer 70 operate to mix either the NRZ signal or the VAC signal (what the Examiner asserts shows the non-return-to-zero sequence of pulses) with the $\frac{\delta VAC}{\delta t}$ signal (which the Examiner asserts shows the pulse sequence). In fact, the $\frac{\delta VAC}{\delta t}$ signal is generated from the VAC signal, and the two are not mixed at any time.

Thus, Mohan does not disclose either "generating a pulse sequence having at least two pulses, and having a predetermined pattern," or "mixing the non-return-to-zero sequence of pulses with the pulse sequence to produce a sequence of shaped ultra wideband wavelets, each wavelet having a predetermined shape having the data encoded therein," as recited in claim 22.

Therefore, based on at least the reasons given above, Applicant respectfully requests that the Examiner withdraw the rejection of claim 22 under 35 U.S.C. § 102(e) as being allegedly anticipated by Mohan.

Allowable Subject Matter

The Examiner has indicated that claims 1-21 are allowed. Applicant acknowledges the allowability of these claims.

The Examiner objected to claims 23-30 as being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

By the response dated April 19, 2005, Applicant amended claim 23 to include all of the limitations of claim 22. Claims 24-29 variously depend from claim 22. This placed claims 23-29 in a condition that the Examiner indicated would be allowable.

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On September 8, 2005, the undersigned spoke with the Examiner by telephonic interview. At this time the Examiner indicated that the prior amendment to claim 23 placed claims 23-29 in condition for allowance. He noted that the Office Action should have reflected this and that Applicant should treat these claims as allowed.

Claim 30 remains dependant on claim 22, which is allowable for at least the reasons given above. Thus, claim 30 should no longer be dependant on a rejected base claim.

Conclusion

Accordingly, Applicant respectfully submits that the claim, as amended, clearly and patentably distinguishes over the cited references of record and as such is deemed allowable. Such allowance is hereby earnestly and respectfully solicited at an early date. If the Examiner has any suggestions, comments, or questions, calls are welcome at the telephone number below.

Although it is not anticipated that any additional fees are due or payable, the Commissioner is hereby authorized to charge any fees that may be required to Deposit Account No. 50-1147.

Respectfully Submitted,



Brian C. Altmiller
Reg. No. 37,271

Date: September 8, 2005

Posz Law Group, PLC
12040 South Lakes Drive
Suite 101
Reston, VA 20191
Phone (703) 707-9110
Fax (703) 707-9112
Customer No. 23400